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TAXONOMIC STATUS OF *ZEXMENIA VILLOSA* (ASTERACEAE-HELIANTHEAE)

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ABSTRACT

Zexmenia villosa Polak., which occurs from Costa Rica to southern México, is treated as a valid taxon within the *Lasianthaea fruticosa* (L.) K. Becker complex. A new combination, **Lasianthaea fruticosa** (L.) K. Becker var. villosa *comb. nov.*, is proposed. The variety occurs mostly at higher elevations; at lower elevations it is replaced by the var. *fruticosa*. A map showing the distribution of these two varieties is provided.

KEY WORDS: Asteraceae, Heliantheae, *Lasianthaea, Zexmenia*, México, taxonomy

Becker (1979) provided a monograph of the genus *Lasianthaea*. In this he treated *L. fruticosa* (L.) K. Becker as a wide ranging highly variable complex composed of six, mostly allopatric, regional varieties. Unfortunately, he did not provide distributional maps for the complex. Turner (1989), with his description of *L. gentryi* B. Turner, a species closely related to *L. fruticosa*, provided a map showing the distribution of the varieties recognized by Becker. In this he accepted var. *fruticosa* as circumscribed by Becker, the latter treating *Zexmenia villosa* Polak. as synonymous with *Lasianthaea fruticosa* var. *fruticosa*. The purpose of the present paper is to suggest that *Zexmenia villosa* is a distinct populational taxon that is sympatric with the var. *fruticosa*, occurring at mostly higher elevations, and showing but little tendency, if at all, to intergrade with the latter taxon; indeed, the very few intermediates examined by the present author may represent an occasional hybrid. To my knowledge, however, the two taxa have never been found growing together, and the characters (largely vestiture) which distinguish these apparently do not vary appreciably within a given population. Nevertheless, as indicated in Figure 1 and Table 1, although the two taxa do not normally occur together, they are likely to occur near to one another upon occasion and an occasional hybrid might be expected.

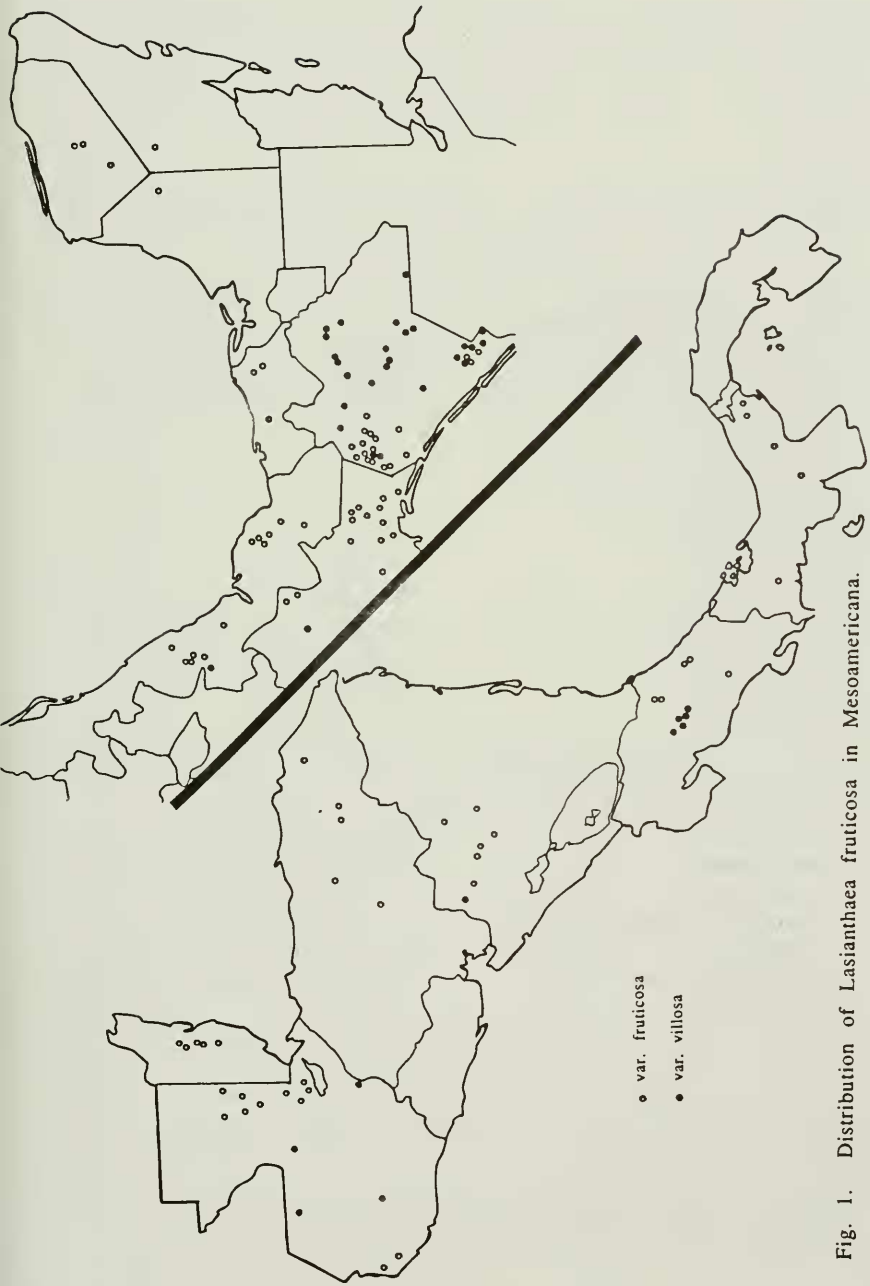

Fig. 1. Distribution of Lasianthaea fruticosa in Mesoamericana.

Table 1. Populations (arranged by municipalities) of *Lasianthaea fruticosa* (varieties *fruticosa* and *villosa*) from Chiapas, México and their associated elevations (all vouchered at LL, TEX).

var. *fruticosa*	var. *villosa*
Angel Albino: *Breedlove 38606* (900 m)	Bochil: *Becker 39* (1550 m)
Arriaga: *Breedlove 28275* (830 m)	Cintalapa: *Breedlove 36715* (900 m)
Arriaga: *Cronquist 10458* (ca. 800 m)	Escuintla: *Matuda 4200* (800 m)
Chiapa de Corzo: *Breedlove 20495* (800 m)	Ixtápa: *Breedlove 13806* (ca. 1200 m)
Chiapa de Corzo: *Laughlin 2613* (ca. 800 m)	Margaritas: *Breedlove 34089* (300 m)
Cintalapa: *Becker 40* (600 m)	Motozintla: *Breedlove 41662* (2100 m)
Cintalapa: *Breedlove 28433* (850 m)	Ocosingo: *Breedlove 22165* (900 m)
Cintalapa: *Breedlove 52705* (870 m)	Ocosingo: *Wendt 2361* (970 m)
Cintalapa: *Breedlove 49005* (1250 m)	Ocosingo: *Colin 1101* (ca. 160 m)
Cintalapa: *Breedlove 48024* (1080 m)	Pantelho: *Calzada 3580* (ca. 1250 m)
Huixtla: *Breedlove 30925* (200 m)	Tenejapa: *Ton 1141* (ca. 1500 m)
Ocozocoautla: *Breedlove 21899* (900 m)	Tenejapa: *Ton 1591* (ca. 1200 m)
Ocozocoautla: *Cronquist 9679* (ca. 800 m)	Trinitaria: *Breedlove 14127* (ca. 1550 m)
Ocozocoautla: *Torc 3298* (ca. 700 m)	Trinitaria: *Breedlove 41898* (1600 m)
San Fernando: *Breedlove 41520* (850 m)	Union Juárez: *Calzada 3701* (ca. 1360 m)
Tuxtla Gut.: *Cronquist 10494* (ca. 1200 m)	Union Juárez: *Breedlove 31671* (2200 m)

Lasianthaea fruticosa var. *fruticosa* is a wide ranging shrub or shrublet to 7 m high, which occupies lower montane tropical rain forests from near sea level to ca. 1200 m elevation. It is distinguished from *Zexmenia villosa* by its vestiture, possessing nearly glabrous leaves, the hairs mostly appressed and sparsely scattered over the undersurfaces, especially the major veins. In addition, the corolla lobes of *Z. villosa* are always to some extent pubescent, while those of var. *fruticosa* are glabrous. As suggested by its name, the leaf vestiture of *Z. villosa* is strikingly villous, the hairs usually numerous and always erect or ascending.

Blake (1915, J. Bot. 53:13) was the first to recognize the close relationship of *Zexmenia villosa* to *Lasianthaea fruticosa*. He reduced the former to varietal status under *Z. costaricensis* Benth. (= *L. fruticosa*). Becker (1979), in reducing *Z. villosa* to synonymy under his concept of *L. fruticosa* var. *fruticosa*, correctly noted that the "Degree of pubescence [within var. *fruticosa*] seems to be related to altitude. Plants from lower elevations (down to sea level) are less pubescent, often almost glabrous, while plants from higher elevations (to pine and cloud forest) tend to be more pubescent, often densely so." He further stated that "*Zexmenia villosa* represents a particularly densely pubescent form well within the normal range of variation for the variety." The latter statement is perhaps true *if* one accepts all of the other collections of var. *fruticosa* cited by Becker (other than the type of *Z. villosa*), but if one looks carefully at the distribution of vestiture types within his var. *fruticosa* (both as regards type of hairs and *degree* of pubescence), it will be noted that there is almost complete congruence of the villous condition with high elevations; intermediates are few and even these might reflect aging or near glabrate individuals of otherwise villous types. Or, as noted above, such plants might represent an occasional sympatric hybrid between var. *villosa* and var. *fruticosa*.

In treating the high elevational *villous* populations of *Lasianthaea fruticosa* var. *fruticosa* (sensu Becker) as a varietal taxon, I follow the treatment of Blake. This would appear to be the more prudent and conservative nomenclatural course, largely because I have not found yet other morphological characters which cohere with those of vestiture. Such characters might very well exist, however, and future field and experimental workers might choose to treat these as sympatric species, in which case a new specific combination will have to be made.

Figure 1 (based upon approximately 180 specimens at LL, TEX) shows the distribution of the two varieties, var. *fruticosa* occurring at mostly lower elevations, as already noted. The largest and best assemblage of the two taxa in the LL, TEX herbaria occurs in Chiapas, México. Table 1 lists the collections from that state, and the elevations from which they were reportedly obtained. In none of these populations were the two taxa found to coexist, although they occur near each other in both western and southeastern Chiapas. Except for two collections, all of the collections of var. *villosa* were collected above 800

m, if not 900 m. Those of var. *fruticosa* ranged from 200 m to 1250 m, but most were collected below 900 m.

My interpretations of vestiture variation in *Lasianthaea fruticosa* var. *fruticosa* (sensu Becker) is that two ecologically and morphologically distinct taxa are represented, and that the high elevational villous entity is best treated at the varietal level, as follows:

Lasianthaea fruticosa (L.) Becker var. villosa (Polak.) B. Turner, *comb. nov.* BASIONYM: *Zexmenia villosa* Polak., Linnaea 41:579. 1877.

Synonyms of the above name include the following:

Zexmenia costaricensis Benth. var. *villosa* (Polak.) Blake, J. Bot. 53:14. 1915.

Zexmenia macropoda S.F. Blake, Contr. U.S. Natl. Herb. 22:634. 1924.

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